

AMENDMENTS TO THE CLAIMS

Claims 1-61 (Cancelled).

62. (Currently Amended) A substrate processing apparatus for processing a substrate while supplying a fluid to the substrate, said substrate processing apparatus comprising:

a substrate holder including rollers shaped and arranged to hold and rotate the substrate, each of said rollers having a circumferential surface and a clamp portion on said circumferential surface, said clamp portion of each of said rollers being shaped to engage and hold an edge portion of the substrate; and

a holder suction unit operable to suck the fluid from said clamp portion of each of said rollers of said substrate holder;

wherein said holder suction unit communicates with a vacuum source.

63. (Previously Presented) The substrate processing apparatus of claim 62, further comprising a periphery suction unit operable to suck the fluid from a peripheral portion of the substrate.

64. (Previously Presented) The substrate processing apparatus of claim 63, wherein said periphery suction unit has a conductive portion made of an electrically conductive material, and said conductive portion is grounded.

65. (Previously Presented) The substrate processing apparatus of claim 63, wherein said periphery suction unit is separate from said holder suction unit.

66. (Previously Presented) The substrate processing apparatus of claim 65, wherein said periphery suction unit comprises a nozzle, and said holder suction unit comprises a nozzle, said nozzle of said periphery suction unit being separate from said nozzle of said holder suction unit.

67. (Previously Presented) The substrate processing apparatus of claim 62, wherein said rollers are shaped and designed to hold and rotate the substrate by utilizing friction between said rollers and the substrate when said substrate holder is brought into contact with the substrate.

68. (Previously Presented) The substrate processing apparatus of claim 62, wherein said holder suction unit is located adjacent to said clamp portion of each of said rollers so as to suck the fluid which has adhered to said clamp portion.

69. (Previously Presented) The substrate processing apparatus of claim 68, wherein said holder suction unit comprises a plurality of nozzles, each of said nozzles corresponding to a respective one of said rollers and having a suction mouth, said nozzles of said holder suction unit being arranged such that said suction mouth of each of said nozzles is no more than 5 mm from said clamp portion of said respective one of said rollers.

70. (Previously Presented) The substrate processing apparatus of claim 69, wherein said nozzles of said holder suction unit are arranged such that said suction mouth of each of said nozzles is no more than 1 mm from said clamp portion of said respective one of said rollers.

Claim 71 (Cancelled).

72. (Currently Amended) The substrate processing apparatus of claim ~~71~~ 62, wherein said holder suction unit comprises a plurality of nozzles, each of said nozzles corresponding to a respective one of said rollers and having a suction mouth, said vacuum source communicating with said holder suction unit so as to apply a suction to said clamp portion of each of said rollers via said nozzles.

73. (Previously Presented) The substrate processing apparatus of claim 72, wherein said nozzles of said holder suction unit are arranged such that said suction mouth of each of said nozzles is no more than 5 mm from said clamp portion of said respective one of said rollers.

74. (Previously Presented) The substrate processing apparatus of claim 62, further comprising a holder cleaning unit operable to supply a cleaning fluid to said clamp portion of each of said rollers of said substrate holder.

75. (Previously Presented) The substrate processing apparatus of claim 74, wherein said holder suction unit has a suction mouth located forward of a supply mouth of said holder cleaning unit with respect to a rotational direction of said substrate holder.

76. (Previously Presented) The substrate processing apparatus of claim 74, wherein:
said holder suction unit comprises a plurality of suction nozzles, each of said suction nozzles corresponding to a respective one of said rollers;

said holder cleaning unit comprises a plurality of supply nozzles, each of said supply nozzles corresponding to a respective one of said rollers; and

each of said suction nozzles is located between a respective corresponding one of said supply nozzles and a point at which a respective corresponding one of said rollers is to contact the substrate with respect to a direction of rotation of said respective corresponding one of said rollers.

77. (Previously Presented) The substrate processing apparatus of claim 62, further comprising at least one gas supply nozzle having a gas supply mouth for supplying a drying gas to the substrate.

78. (Previously Presented) The substrate processing apparatus of claim 77, wherein said at least one gas supply nozzle is oriented such that the drying gas is supplied to the substrate at a direction perpendicular to a surface of the substrate.

79. (Previously Presented) The substrate processing apparatus of claim 77, wherein said at least one gas supply nozzle is operable to move between a central portion of the substrate and a peripheral portion of the substrate while supplying the drying gas to the substrate.

80. (Previously Presented) The substrate processing apparatus of claim 79, wherein said at least one gas supply nozzle is operable to move at a variable movement speed according to a relative position of said at least one gas supply nozzle to the substrate.

81. (Previously Presented) The substrate processing apparatus of claim 79, wherein said at least one gas supply nozzle is operable to stop supplying the drying gas before said gas supply mouth reaches the edge portion of the substrate.

82. (Previously Presented) The substrate processing apparatus of claim 77, wherein said gas supply nozzle is operable to control a flow rate of the drying gas to be supplied from said gas supply nozzle by changing a pressure of the drying gas to be supplied from said gas supply nozzle.

83. (Previously Presented) The substrate processing apparatus of claim 62, further comprising:

a gas supply unit including a plurality of gas supply nozzles for supplying a drying gas to a surface of the substrate held by said substrate holder; and

a gas supply controller for independently setting gas supply start timings and gas supply stop timings of said gas supply nozzles.

84. (Previously Presented) The substrate processing apparatus of claim 62, further comprising:

a gas supply unit including a plurality of gas supply nozzles for supplying a drying gas to a surface of the substrate held by said substrate holder; and

a gas supply controller for independently setting flow rates of the drying gas supplied from said gas supply nozzles.

85. (Previously Presented) The substrate processing apparatus of claim 62, wherein the fluid is a liquid, and said holder suction unit is operable to not suck the liquid while the liquid is supplied to the substrate so that a film of the liquid is formed over a surface of the substrate.

86. (Previously Presented) The substrate processing apparatus of claim 62, wherein said holder suction unit has a conductive portion made of an electrically conductive material, and said conductive portion is grounded.

87. (Previously Presented) The substrate processing apparatus of claim 62, wherein each of said rollers is made of a chemical-resistant fluororesin.

88. (Previously Presented) The substrate processing apparatus of claim 62, wherein said clamp portion of each of said rollers comprises an annular groove extending completely around said circumferential surface of said each of said rollers.

89. (Currently Amended) A substrate processing method comprising:

holding a substrate using rollers, each of the rollers having a circumferential surface and a clamp portion on the circumferential surface, the clamp portion of each of the rollers being shaped to engage and hold an edge portion of the substrate;

rotating the substrate by rotating the rollers of the substrate holder;

supplying a fluid to the substrate while the substrate is being rotated; and

sucking the fluid which has been transferred from the substrate to the clamp portion of each of the rollers of the substrate holder, said sucking being performed by a holder suction unit located adjacent to the clamp portion of each of the rollers of the substrate holder, the holder suction unit communicating with a vacuum source such that the holder suction unit performs said sucking via a vacuum from the vacuum source.

90. (Previously Presented) The substrate processing method of claim 89, further comprising sucking the fluid from a peripheral portion of the substrate by using a periphery suction unit located adjacent to the peripheral portion of the substrate.

91. (Previously Presented) The substrate processing method of claim 89, further comprising supplying a cleaning fluid to the clamp portion of each of the rollers by using a holder cleaning unit.

92. (Previously Presented) The substrate processing method of claim 91, wherein:
said supplying of the cleaning fluid comprises supplying the cleaning fluid to the clamp portion of each of the rollers;
said sucking of the transferred fluid comprises sucking the transferred fluid from the clamp portion of each of the rollers; and
said sucking being performed between a location of said supplying of the cleaning fluid and a point at which a respective corresponding one of the rollers is to contact the substrate with respect to a direction of rotation of the respective corresponding one of the rollers.

93. (Previously Presented) The substrate processing method of claim 89, further comprising supplying a drying gas to the substrate using a gas supply nozzle.

94. (Previously Presented) The substrate processing method of claim 93, wherein said supplying of the drying gas comprises supplying the drying gas to the substrate at a direction perpendicular to a surface of the substrate.

95. (Previously Presented) The substrate processing method of claim 93, wherein said supplying the drying gas comprises moving the gas supply nozzle between a central portion of the substrate and a peripheral portion of the substrate during said supplying the drying gas.

96. (Previously Presented) The substrate processing method of claim 95, wherein said supplying the drying gas comprises moving the gas supply nozzle between the central portion of the substrate and the peripheral portion of the substrate at a variable speed according to a relative position of the gas supply nozzle to the substrate.

97. (Previously Presented) The substrate processing method of claim 95, wherein said supplying the drying gas comprise stopping the supply of the drying gas before the gas supply nozzle reaches the edge portion of the substrate.